

1 Amendments to the Claims:

2 This listing of claims will replace all prior versions, and
3 listings, of claims in the application using (Original) (Currently
4 Amended) (New) (Canceled) (Previously Amended) nomenclature, as
5 recited in the below listing of claims.

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7 1. (Currently Amended) A method of broadcasting from a proximal
8 cache at a proximal internet protocol address (IPA) a routing item
9 for indicating an originator storing web content data associated
10 with a uniform resource locator (URL) of a web server permanently
11 storing the web content data, the method comprising the steps of:
12 originating URL identifier at the proximal IPA generating an
13 originating URL identifier for indicating the URL,
14 originating IPA generating at the proximal IPA an originating
15 IPA for indicating the originator,
16 destination IPA generating at the proximal IPA a destination
17 IPA for indicating a destination cache,
18 associating at the proximal IPA the originating IPA and the
19 originating URL as the routing item, and
20 transmitting the routing item from the proximal cache at the
21 proximal IPA to the destination cache at a destination IPA.

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1 2. (Previously Presented) The method of claim 1 further comprising
2 the steps of:

3 distance generating a distance metrics for indicating a web
4 hop distance of a number of the plurality of cooperative web caches
5 through which the URL web content data would be communicated from
6 the from the originator through the plurality of cooperative web
7 caches to the proximal web cache.

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10 3. (Original) The method of claim 2 wherein, the originating URL
11 identifier is a proximal URL identifier, the originating IPA is the
12 proximal IPA, the proximal cache stores locally the web content
13 data, and

14 the metric distance is one indicating that one web hop is
15 between the destination cache to the proximal cache.

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18 4. (Original) The method of claim 2 wherein, the originating URL
19 identifier is a source URL identifier,

20 the originating IPA is the source IPA indicating an IPA
21 location of a source distally storing the web content data,

22 the metric distance is greater than one indicating a number
23 greater than one of the number of web hops between the destination
24 cache through the proximal cache to the source distally storing the
25 web content data.

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1 5. (Original) The method of claim 4 wherein,

2 the source is a distal web cache distally storing the web
3 content data, and

4 the source IPA is a distal web cache IPA.

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6 6. (Original) The method of claim 4 wherein,

7 the source is the web server distally permanently storing the
8 web content data, and

9 the source IPA is a web server IPA indicating the IPA location
10 of the web server.

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12 7. (Original) The method of claim 1 wherein,

13 the originating URL identifier is selected from the group
14 consisting of,

15 an exact URL identifier being an exact URL comprising a
16 plurality of URL components,

17 a wildcard URL identifier being a wildcard URL comprising a
18 plurality of URL components a last URL component of which being a
19 wildcard component, and

20 a coded URL identifier being a coded URL comprising a series
21 of hashing codes of a decomposed URL being a decomposition of the
22 URL selected from the group consisting of either an exact URL or a
23 wildcard URL each of which comprising a series of URL components,
24 the series of hashing codes being a sequence of hashing codes of
25 respective URL segments of a respective series of increasingly
26 concatenated URL components of the series of URL components of the
27 URL.

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1 8. (Currently Amended) A method of broadcasting from a proximal
2 cache at a proximal internet protocol address (IPA) a routing item
3 for indicating a distal web cache storing web content data
4 associated with a uniform resource locator (URL) of a web server
5 permanently storing the web content data, the proximal web cache is
6 a first one of a plurality of cooperative web caches, the distal
7 web caches is a last one of the plurality of cooperative web
8 caches, the method comprising the steps of:

9 URL identifier generating at the proximal IPA a URL identifier
10 for indicating the web content data of the URL stored in the distal
11 web cache,

12 proximal IPA generating at the proximal IPA the proximal IPA
13 for indicating the location of the proximal cache,

14 destination IPA generating at the proximal IPA a destination
15 IPA for indicating a destination cache,

16 distance generating at the proximal IPA a distance metric for
17 indicating a web hop distance of any number of the plurality of
18 cooperative web caches through which the web content data would be
19 communicated from the distal web cache to the destination web
20 cache,

21 associating at the proximal IPA the proximal IPA and the URL
22 identifier and the distance metric as the routing item, and

23 transmitting the routing item from the proximal cache at the
24 proximal IPA to the destination cache at a destination IPA.

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1 9. (Original) The method of claim 8 wherein,

2 the distance metric is greater than one indicating a number
3 greater than one of the number of web hops between the destination
4 cache through the proximal cache to the distal web cache storing
5 the web content data.

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8 10. (Original) The method of claim 8 wherein, the URL identifier is
9 selected from the group consisting of,

10 an exact URL identifier being an exact URL comprising a
11 plurality of URL components,

12 a wildcard URL identifier being a wildcard URL comprising a
13 plurality of URL components a last URL component of which being a
14 wildcard component, and

15 a coded URL identifier being a coded URL comprising a series
16 of hashing codes of a decomposed URL being a decomposition of the
17 URL selected from the group consisting of either an exact URL or a
18 wildcard URL each of which comprising a series of URL components,
19 the series of hashing codes being a sequence of hashing codes of
20 respective URL segments of a respective series of increasingly
21 concatenated URL components of the series of URL components of the
22 URL.

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1 11. (Currently Amended) The method of claim 8 further comprising
2 the steps of:

3 repeating the URL identifier generating step, proximal IPA
4 generating step, distance generating step, the associating step, a
5 plurality of times for generating a plurality of routing items each
6 comprising a URL identifier and a respective distance metric, and
7 incorporating the plurality of routing items within a protocol
8 data structure within the a routing packet prior to the
9 transmitting step, the routing protocol packet comprising the URL
10 and a respective distance metrics and comprising the proximal IPA
11 and the destination IPA.

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12. (Currently Amended) A method of broadcasting from a proximal cache at a proximal internet protocol address (IPA) a routing item for indicating a distal web cache storing web content data associated with a uniform resource locator (URL) of a web server permanently storing the web content data, the proximal web cache is a first one of a plurality of cooperative web caches, the distal web caches is a last one of the plurality of cooperative web caches, the method comprising the steps of:

storing at the proximal IPA in a routing table a plurality of URL identifiers cross referenced to a respective plurality of distance metrics,

URL identifier generating at the proximal IPA a URL identifier of the plurality of URL identifiers, the URL identifier for indicating the web content data of the URL stored in the distal web cache,

proximal IPA generating at the proximal IPA the proximal IPA for indicating the location of the proximal cache,

destination IPA generating at the proximal IPA a destination IPA for indicating a destination cache,

distance generating at the proximal IPA a distance metric[[s]] by cross referencing the URL identifier to one of the plurality of URL identifiers and to a respective one of the plurality of distance metrics for indicating a web hop distance of any number of the plurality of cooperative web caches through which the web content data would be communicated from the distal web cache to the destination web cache,

associating the proximal IPA and the URL and the distance metric[[s]] as the routing item, and

1 transmitting the routing item in a routing packet within a
2 routing protocol from the proximal cache at the proximal IPA to the
3 destination cache at a destination IPA.

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6 13. (Original) The method of claim 12 wherein,

7 the originating URL identifier is selected from the group
8 consisting of,

9 an exact URL identifier being an exact URL comprising a
10 plurality of URL components,

11 a wildcard URL identifier being a wildcard URL comprising a
12 plurality of URL component a last URL component of which being a
13 wildcard component, and

14 a coded URL identifier being a coded URL comprising a series
15 of hashing codes of a decomposed URL being a decomposition of the
16 URL selected from the group consisting of either an exact URL or a
17 wildcard URL each of which comprising a series of URL components,
18 the series of hashing codes being a sequence of hashing codes of
19 respective hashing of URL segments of a respective series of
20 increasingly concatenated URL components or the series of URL
21 components of the URL.

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1 14. (Previously Presented) The method of claim 12 further
2 comprising the steps of:

3 repeating the URL identifier generating step, proximal IPA
4 generating step, distance generating step, the associating step, a
5 plurality of times for generating a plurality of routing items each
6 comprising a URL identifier and a respective distance metric, and
7 incorporating the plurality of routing items within a protocol
8 data structure within the routing packet prior to the transmitting
9 step, the routing protocol packet comprising the URL and a
10 respective distance metrics and comprising the proximal IPA and the
11 destination IPA.

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13 15. (Original) The method of claim 12 wherein,

14 the storing steps creates a routing table for cross referencing
15 the plurality of URL identifiers to the plurality of distance
16 metrics and to one or more juxtaposed cooperative web caches IPAs
17 of one or more juxtaposed cooperative web caches of the cooperative
18 web caches, the one or more juxtaposed cooperative web caches for
19 routing URL identifiers to distal web caches storing the web
20 content data of the respective plurality of URL identifiers.

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22 16. (Previously Presented) The method of claim 15 wherein,

23 the proximal cache and the one or more juxtaposed cooperative
24 web caches being within a local group of cooperative web caches.

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26 17. (Previously Presented) The method of claim 16 wherein,

27 the proximal cache is within one or more local groups of
28 cooperative web caches.